

REMARKS

By this amendment, Applicant has made minor amendments to Claims 1, 3, 7, 10, 19, 20, 22 and 28, and have cancelled without prejudice Claim 31. In addition, Claims 49-56 are now added which reflect additional subject matter which is patentable over the cited references. These amendments are described further below. All of the amendments are well supported in the original application and no new matter has been added. Claims 1-30 and 32-56 are currently under examination in the present application. For the reasons set forth below, Applicant submits that the present amendments and arguments place this application in condition for immediate allowance.

With regard to the amendments to Claims 1, 3, 7 and 10, these claims now recite the wax as a positive element, and the percentage of wax is disclosed in the application, e.g., at page 22, line 14. With regard to Claims 19 and 20, these claims have been amended to add Titanium Dioxide as an element. With regard to the amendments to Claim 22, these now refer the catalytic compounds such as titanium dioxide which are not absorbed but remain on the surface of the coal and which to work in the flue gases, such as disclosed at the bottom of page 35 to the top of page 36. The amendments to Claim 28 reflect the combination of the subject matter of dependent Claim 31 (which had not been rejected) into Claim 28 and thus the objections to Claim 28 have become moot. New claims 49 and 50 are added as dependent claims relating to subject matter disclosed but not included in the prior claims.

Finally, new Claims 51-54 reflect rewritten versions of previous dependent claims that had not been rejected in the prior action, and thus are allowable over the prior art. In particular, in the Official Action, there were no rejections to Claims 23, 24, 28 and 39, and thus these claims have been rewritten as independent claims 51-54. More

specifically, new Claim 51 is a rewritten version of Claim 23 incorporating the previous version of Claim 22 on which it depended. New Claim 52 reflects a rewritten version of Claim 24 including the subject matter of the prior version of its parent claim, Claim 22. New Claim 53 reflects a rewritten version of Claim 38 including the subject matter of the prior version of its parent claim, Claim 28. New Claim 54 reflects a rewritten version of Claim 39 including the subject matter of the prior version of its parent claim, Claim 28. In light of the fact that the Examiner has not made any rejections to these claims, it is submitted that new Claims 51-54 are in condition for allowance. Claims 55-56 reflect the addition of the catalysts as identified in the other claims, and because these claims are dependent upon Claims 53 and 54, respectfully, they are patentable as well.

In the Official Action, the Examiner objected to the claims on the basis of obvious-type double patenting. Without addressing the merits of this rejection, this rejection has become moot in light of the Terminal Disclaimer filed herewith.

In the Official Action, the Examiner rejected Claims 28 and 29 under 35 U.S.C. § 102 on the basis of Franke U.S. Pat. No. 4,741,278. Without addressing the merits of this rejection which Applicants contest, the rejection has become moot since Applicants have now incorporated the subject matter of Claim 31 (which was not rejected in the prior Action) into Claim 28. Accordingly, Claim 28 and its dependent claim, Claim 29, overcome all prior rejections and have been placed in condition for allowance.

In the Official Action, the Examiner rejected Claims 22, 25, 27 and 30 as obvious over Franke U.S. Pat. No. 4,741,278. This rejection has been respectfully traversed, in particular, amended claim 22 now refers to the claimed method whereby the catalytic compounds are placed directly on the coal and work in the flue gases, and this element

is not disclosed or suggested in Franke which **teaches away** from the present invention, as explained in more detail below.

As described in Applicant's disclosure, methods and formulas with catalytic compounds are applied to coal in a manner to keep the catalyst on the surface of the coal. This is important because, as disclosed, e.g., at pp. 35-36 of the specification, "the catalyst works in the flue gases". As set forth as well in Applicant's specification, the catalytic compounds are applied to surface of the substrate, and since these compounds are pigments and insoluble solids, they do not penetrate into the substrate.

In addition, in the present invention, the methods described in this disclosure do not require grinding, but can be utilized in systems wherein grinding takes place. For example, at page 4 of the application, Applicant discloses that "Grinding distributes the NO_x reducers evenly", and at pages 7-8 it states "to provide a product which is introduced to a fuel such as coal prior to combustion and preferably by grinding it up with the coal before the coal enters the combustion chamber so as to be dispersed evenly throughout the coal". This grinding would be recognized as being a normal part of fuel processing conducted by a plant operation group for a boiler that burned pulverized coal. This is not an additional step, but an integral part of a pulverized coal burning facility. Applicants' claimed invention is not directed specifically to adding the step of grinding, but if grinding is done, as in a pulverized coal fired plant, then a catalytic compound may be added before or during grinding.

As indicated above, the present method applies catalyst to the surface of the coal in a manner to promote contact between catalyst and flue gas, and the catalyst remains on the surface of coal where it can contact flue gas. See pages 35-36 of the

specification which discloses that contact between catalyst and flue gas is advantageous to NOx reduction.

Entirely contrary to the present method wherein the catalyst is placed on the surface of the coal and will promote NOx reduction in the flue gas, the method disclosed in the Franke reference places its Iron Oxide on the inside of the pellet where it does **not** have contact with the flue gas. Clearly, Franke thus **teaches away** from the present invention since if he was trying to increase contact of the catalyst with the flue gas, he would have added a higher concentration of iron near the surface of the pellet as he did with binder #2. However, not only is there no disclosure or suggestion of doing so, Franke does not even mention the presence or need for a catalyst. The method described in Franke is thus wasteful in terms of amount of additives and energy utilized. Franke also adds a step of drying the pellets which is expensive and even further reduces NOx reduction. In tests disclosed in the Franke reference, his stated reduction of NOx was only 12.5% with 60 pounds of iron oxide per ton of coal. This is far less than the NOx reduction obtained by the present invention which can produce 20% reduction in NOx with only 2 pounds of catalyst per ton of coal.

In short, Franke discloses a system which is directly opposite to the subject matter of these claims wherein iron oxide is placed in the inside of a pellet and not on the surface, and thus, even if considered a catalyst (which Franke does not disclose), would not work in the flue gases as would the catalytic compounds of the present invention. In light of the fact that Franke does not disclose or suggest the presently claimed subject matter and in fact **teaches away** from the present claims, it does not make Applicants' Claim 22 obvious, and thus Claim 22 and its dependent claims are

patentable over this reference. Accordingly, the Examiner's rejection on the basis of the Franke reference is respectfully traversed and should be withdrawn.

Finally, the Examiner rejected Claims 1, 3, 7, 10, 13-15 and 18-21 under 35 U.S.C. §103 as being obvious in light of the Wilson US Patent Publication 2005/0202089.¹ It is presumed that this rejection was meant to include Claim 17 and not Claim 18, since Claim 18 depends upon Claim 11 which was not rejected. In any event, this rejection, insofar as applied to the claims as amended, is respectfully traversed for the reasons that follow.

As indicated above, Applicants have now amended Claims 1, 3, 7 and 10 to positively recite the Wax element in the range of 0.5% to 70%, and it is clear that such an element is not disclosed or suggested in the Wilson reference. To the contrary, as the Examiner has recognized, the Wilson reference is directed to a cleaning composition and not to the chemical change agent used as an additive in combustible materials as claimed in the present application. Accordingly, the use of a wax such as claimed in the present amended claims is not disclosed in Wilson and further distinguishes the present claims from Wilson. Moreover, because Wilson relates to a cleaning composition, such a reference **teaches away** from the use of a wax in such a composition since the inclusion of this was would be contrary to the intent of the cleaning composition in Wilson.

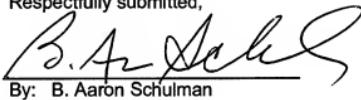
Accordingly, it is clear that the Wilson reference does not disclose or suggest the present claims, and that Claims 1, 3, 7 and 10 and claims dependent therefrom are not made obvious by virtue of the Wilson reference. Applicants thus submit that the

¹ Applicants do not concede that the Wilson reference is prior art to the present claims in light of the fact that it is only a continuation-in-part of its priority application and may not have included the relevant subject matter in the priority document. In any event, the present amendments make the rejections moot.

Examiner's rejection to Claims 1, 3, 7, 10, 13-15, 18 (or 17) and 19-21 are respectfully traversed and should be withdrawn

In light of the amendments and arguments provided herewith along with the attached Petition, Applicants submit that the present application overcomes all prior rejections and has been placed in condition for immediate allowance. Such action is respectfully requested.

Respectfully submitted,



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